



RAW SEQUENCE LISTING ERROR REPORT

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Application Serial Number: 10/076,839
Source: OIPE
Date Processed by STIC: 3-4-2002

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FOR CRF SUBMISSION QUESTIONS, PLEASE CONTACT MARK SPENCER, 703-308-4212.

FOR SEQUENCE RULES INTERPRETATION, PLEASE CONTACT ROBERT WAX, 703-308-4216.

PATENTIN 2.1 e-mail help: patin21help@uspto.gov or phone 703-306-4119 (R. Wax)

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1. EFS-Bio (<http://www.uspto.gov/ebc/efs/downloads/documents.htm>), EFS Submission User Manual - ePAVE)
2. U.S. Postal Service: U.S. Patent and Trademark Office, Box Sequence, P.O. Box 2327, Arlington, VA 22202
3. Hand Carry directly to:
U.S. Patent and Trademark Office, Technology Center 1600, Reception Area, 7th Floor, Examiner Name, Sequence Information, Crystal Mall One, 1911 South Clark Street, Arlington, VA 22202
Or
U.S. Patent and Trademark Office, Box Sequence, Customer Window, Lobby, Room 1B03, Crystal Plaza Two, 2011 South Clark Place, Arlington, VA 22202
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Revised 01/29/2002



OIPE

RAW SEQUENCE LISTING
PATENT APPLICATION: US/10/076,839

DATE: 03/04/2002
TIME: 14:56:13

Input Set : A:\PH-1176 (Sequence Listing).txt
Output Set: N:\CRF3\03042002\J076839.raw

3 <110> APPLICANT: Japan International Research Center for Agricultural Sciences
5 <120> TITLE OF INVENTION: Full-length Genomic RNA of Papaya Leaf-Distortion Mosaic
Virus
7 <130> FILE REFERENCE: PH-1176
C--> 9 <140> CURRENT APPLICATION NUMBER: US/10/076,839
C--> 9 <141> CURRENT FILING DATE: 2002-02-15
9 <150> PRIOR APPLICATION NUMBER: JP 2001-040523
10 <151> PRIOR FILING DATE: 2001-02-16
12 <160> NUMBER OF SEQ ID NOS: 4
14 <170> SOFTWARE: PatentIn Ver. 2.0

**Does Not Comply
Corrected Diskette Needed**

ERRORED SEQUENCES

869 <210> SEQ ID NO: 2
870 <211> LENGTH: 3269
871 <212> TYPE: PRT
872 <213> ORGANISM: Papaya Leaf-Distortion Mosaic Virus
874 <400> SEQUENCE: 2
875 Met Ser Ile Val Ile Gly Asp Phe Ser Ile Pro Leu Ile Cys Arg Thr
876 1 5 10 15
877 Glu Gln Ile Glu Cys Val Arg Leu Val Pro Gly Thr Arg Val Glu Glu
879 20 25 30
881 Val Lys Thr Ile Lys Lys Val Leu Lys Thr His Tyr Gln Glu Ile Thr
882 35 40 45
884 Leu Gly Cys Thr Asp Arg Cys Ala Gly Leu Ser Ala Tyr Thr Lys Thr
885 50 55 60
887 Ser Leu Lys Arg Ala Ile Lys Glu Lys Asp Leu Thr Ala Ser Gly Ser
888 65 70 75 80
890 Cys Phe His Cys Gly Leu Arg Ala Gln Ile Gly Glu Gly Arg Lys Arg
891 85 90 95
893 Val Glu Leu Ala Pro Ile Ser Val Met Glu Asp Val Glu Thr Val Glu
894 100 105 110
896 Gln Val Leu Val Pro Cys Met Val Glu Glu Lys Tyr Tyr Lys Glu Val
897 115 120 125
899 Ser Asn Phe Gln Lys Ala Thr Leu Ile Asp Lys Pro Lys Leu Thr Ile
900 130 135 140
902 Ala Pro Val Leu Met Ala Gln Pro Ala Gln Val Pro Arg Pro Ala Val
903 145 150 155 160
905 Phe Asn Glu Ile Arg Lys Val His Glu Glu Met Lys Ser Gln Thr Ser
906 165 170 175
908 Glu Asn Lys Val Leu Glu Glu Glu Thr Gln Cys Ala Ser Asp Ala Ala
909 180 185 190
911 Leu His His Leu Asp Asp Val His Ala Cys Arg Ala Arg Ala Gln Val

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912 195 200 205
914 Gly Ile Glu Arg Ile Leu Ala Arg His Ala Arg His Arg Ile Glu Ala
915 210 215 220
917 Arg Gln Gln Val Glu Glu Gln Ser Glu Ala Leu Ala Ala Phe Glu
918 225 230 235 240
920 Ser Phe Phe Asn Gln Thr His Arg Glu Asp Arg Tyr Glu Gly Lys Val
921 245 250 255
923 Leu Thr Ile Arg Asn Gly Ile Thr Gly Trp Phe Glu Pro Asn Arg Asn
924 260 265 270
926 Asp Ile Lys Asn Ala Ala Arg Arg Lys Arg Ala Asn Lys Lys Ile
927 275 280 285
929 Pro Phe Val Ala Arg Glu Asn Asp Val Ala Arg Ile Glu Thr His Glu
930 290 295 300
932 Pro Asn Val Lys Glu Glu Thr Lys Asp Val Glu Glu Ala Thr Asp Thr
933 305 310 315 320
935 Tyr Thr Phe Lys Lys Gln Arg Asn Asp Lys Lys Arg Val Leu Lys Glu
936 325 330 335
938 Asn Val Ser Leu Ser Met Ala Arg Ile Asn Glu Leu Val Arg Cys Val
939 340 345 350
941 Thr Lys Leu Cys Arg Lys Asp Ser Lys Glu Leu Glu Phe Ile Gly Lys
942 355 360 365
944 Arg Gly Ser Leu Arg Val Gln Cys Thr Lys Asn Cys Gly Ser Arg Val
945 370 375 380
947 Ile Leu Arg His Leu Arg Gly Glu Leu Arg Arg Lys Asp Cys Tyr Trp
948 385 390 395 400
950 Asp Arg Ile Ile Glu Asn Phe Glu Ile Ala Ala Ala Lys Leu Gln
951 405 410 415
953 Asn Lys Asn Leu Asn Asn Asn Glu Ser Val Arg Arg Gly His Ser Gly
954 420 425 430
956 His Ile Ile Gln Tyr Asp Lys Phe Arg Gly Leu Ser Gly Arg His Phe
957 435 440 445
959 Gly Ser Tyr Ile Ile Val Arg Gly Ser Met Asp Gly Arg Ile Ile Asp
960 450 455 460
962 Ala Arg Ser Lys Ile Thr His Ser Val Met Ile Asn Met Thr His Tyr
963 465 470 475 480
965 Ser Asp Ala Gly Leu Ser Phe Trp Lys Gly Phe Asp Arg Gln Phe Ile
966 485 490 495
968 Asp Ile Arg Asp Arg Pro Lys Asn Ala His Glu Cys Lys Ala Thr Ile
969 500 505 510
971 Asn Val Glu Glu Cys Gly Glu Met Ala Ala Ile Val Asn Gln Leu Leu
972 515 520 525
974 Phe Pro Met Trp Lys Ile Thr Cys Thr Gln Cys Gly Glu Leu Leu Glu
975 530 535 540
977 Met Leu Ser Gln Glu Glu Leu Glu Ser Phe Arg Arg Lys Arg Ser
978 545 550 555 560
980 Gln Leu Ala Ser Lys Leu Ser Ser Leu His Ile Lys Phe Pro Tyr Val
981 565 570 575
983 Asp His Phe Leu Asn Arg Tyr Glu Asn Ser Leu Asn Arg Met Asn Thr
984 580 585 590

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986 Asn Phe Asp Ala His Lys Gln Ile Ala Gln Ile Ile Gly Ser Arg Lys
987 595 600 605
989 Glu Ile Pro Phe Ser Asn Leu Glu His Leu Asn Glu Leu Leu Ile Lys
990 610 615 620
992 Ser Asp Lys Leu Val Ser Glu Asp Phe Tyr Glu Met Ser Gln Cys Leu
993 625 630 635 640
995 Leu Glu Leu Thr Arg Trp His Lys Asn Arg Ser Asp Ser Phe Lys Lys
996 645 650 655
998 Gly Glu Ile His His Phe Arg Asn Lys Met Ser Gly Lys Ala Gln Phe
999 660 665 670
1001 Asn Phe Ala Leu Met Cys Asp Asn Gln Leu Asp Lys Asn Gly Asn Phe
1002 675 680 685
1004 Val Trp Gly Glu Arg Gly Tyr His Ala Lys Arg Phe Phe Leu Asn Phe
1005 690 695 700
1007 Phe Glu Lys Val Asp Ser Thr Asp Gly Tyr Lys Lys His Ile Met Arg
1008 705 710 715 720
1010 Val Asn Pro Asn Gly Thr Arg Gln Thr Ala Ile Gly Lys Leu Ile Leu
1011 725 730 735
1013 Ser Thr Asp Pro Ser Thr Leu Arg Gln Gln Met Lys Gly Ser Pro Ile
1014 740 745 750
1016 Thr Arg Val Pro Val Gly Lys Tyr Cys Thr Ser Lys Arg Asp Gly Cys
1017 755 760 765
1019 Tyr Val Tyr Pro Ala Cys Cys Val Thr Met Glu Asp Gly Thr Pro Leu
1020 770 775 780
1022 Phe Ser Asp Ile Lys Met Pro Thr Lys Asn His Leu Val Ile Gly Asn
1023 785 790 795 800
1025 Ser Gly Asp Pro Lys Tyr Val Asp Val Pro Ser Ser Ser Ser Asp Met
1026 805 810 815
1028 Ile Val Ala Lys Glu Gly Tyr Cys Tyr Leu Asn Ile Phe Leu Ala Met
1029 820 825 830
1031 Leu Leu Asn Val Asn Glu Ser Glu Ser Lys Ser Phe Thr Lys Lys Val
1032 835 840 845
1034 Arg Asp Ile Ile Val Pro Arg Leu Gly Gln Trp Pro Ser Leu Ile Asp
1035 850 855 860
1037 Val Ala Thr Glu Cys Tyr Phe Leu Ser Ala Phe His Pro Glu Thr Lys
1038 865 870 875 880
1040 Asn Ala Glu Leu Pro Arg Ile Leu Val Asp His Thr Ser Lys Cys Met
1041 885 890 895
1043 His Val Ile Asp Ser Tyr Gly Ser Leu Asp Thr Gln Phe His Val Leu
1044 900 905 910
1046 Lys Ala Asn Thr Val Ser Gln Leu Ile Lys Phe Ala Asp Asn Asp Leu
1047 915 920 925
1049 Asp Ser Glu Leu Lys His Tyr Leu Val Gly Gly Asp Leu His Ser Lys
1050 930 935 940
1052 Gln Ala Pro Gln Cys Ser Ile Lys Leu Leu Cys Lys Cys Ile Tyr Arg
1053 945 950 955 960
1055 Pro Lys Leu Met Arg Gln Cys Ile Glu Glu Glu Pro Phe Leu Leu Ile
1056 965 970 975
1058 Leu Ala Cys Ile Ser Pro Gly Val Leu Leu Ala Leu Tyr Asn Ser Gln

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1059	980	985	990
1061 His Leu Glu Leu Ala Leu Lys Tyr Trp Met Ser Lys Gln Gln Ser Val			
1062 995	1000	1005	
1064 Ala Ala Leu Phe Ala Met Ile His Gly Leu Ala Ala Lys Val Thr Val			
1065 1010	1015	1020	
1067 Ala Gln Thr Leu Asn Glu Gln Arg Leu Ile Leu Glu Arg Gly Ala Arg			
E--> 1068 025 1030	1035	1040	
1070 Asn Leu Ile Ser Val Met Glu Thr Ile His Met Thr Ser His Ser Tyr			
1071 1045	1050	1055	
1073 Gln Pro Ala Leu Leu Gln Leu Gln Val Met Ala Asn Arg Arg Asp Met			
1074 1060	1065	1070	
1076 Asn Ser Thr Leu Asp Leu Ala Gly Phe Ser Ile Leu Gln Ser Glu Asp			
1077 1075	1080	1085	
1079 Ser Met Tyr Trp Met Glu Lys Ser Tyr Leu Met Glu Leu Glu Asp Ser			
1080 1090	1095	1100	
1082 Trp Asn Asp Leu Lys Trp Leu Glu Lys Leu Gln Glu Met Trp Arg Leu			
E--> 1083 105 1110	1115	1120	
1085 Ser Lys Tyr Ser Ile Ser Gly Ile Ser Gln Leu Ser Met Lys Gly Ala			
1086 1125	1130	1135	
1088 Thr Asp Leu Gly Gly Arg Tyr Ser Val Ser Ala Lys Gln Phe Ile Thr			
1089 1140	1145	1150	
1091 Ser Val Met Lys Pro Val Lys Lys Ser Cys Val Lys Ala Arg Asp Thr			
1092 1155	1160	1165	
1094 Cys Lys Glu Val Ile Ile Asn Thr Thr Ser Trp Thr Phe Arg Ala Thr			
1095 1170	1175	1180	
1097 Phe Ser Leu Cys Arg Trp Cys Leu Pro Asp Cys Leu Lys Phe Ile Asn			
E--> 1098 185 1190	1195	1200	
1100 Met Leu Ile Val Ile Ser Leu Ile Leu Ser Ile Trp His Ser Ala Asn			
1101 1205	1210	1215	
1103 Ser Ile Ser Phe Asp Tyr Ala Gln Met Lys Arg Glu Lys Gln Val Asn			
1104 1220	1225	1230	
1106 Ile Glu Lys Val Leu Met Asn Asn Leu Val Ala Leu His Lys Glu Gln			
1107 1235	1240	1245	
1109 Ile Lys Ile Asn Pro Asp Leu Thr Lys Glu Glu Phe Lys Glu Tyr Ile			
1110 1250	1255	1260	
1112 Ala Arg Ser Arg Pro Glu Leu Ile Ala Leu Val Asn Lys Glu Leu Gln			
E--> 1113 265 1270	1275	1280	
1115 Glu Glu Val Asp His Gln Ala Lys Arg Lys Gly Glu Gln Asn Leu Glu			
1116 1285	1290	1295	
1118 Lys Ile Ile Ala Phe Val Ala Leu Val Met Met Ile Phe Asp Ser Glu			
1119 1300	1305	1310	
1121 Lys Ser Asp Cys Val Tyr Lys Thr Leu Asn Lys Leu Arg Asn Leu Val			
1122 1315	1320	1325	
1124 Ala Thr Cys Asp Glu Pro Val Ala His Gln Ser Leu Asp Asp Ile Gln			
1125 1330	1335	1340	
E--> 1127 Asp Ile Leu Thr Asp Lys Glu Thr Thr Ile Asp Phe Asp Leu Asp Cys			
1128 345 1350	1355	1360	
1130 Glu Gly Ser Lys Val Thr Glu Phe Lys Glu Met Asn Phe Ala Ala Trp			
1131 1365	1370	1375	

When an amino acid number is greater, up to 9,999, lands on the left-hand margin. The first number in the series must be placed under the first letter of the amino acid. Example:

Ala
1025

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1133 Trp Glu Lys Gln Leu Gln Cys Asp Arg Val Val Pro His Tyr Arg Thr
1134 1380 1385 1390
1136 Thr Gly Lys Phe Ile Glu Phe Thr Arg Glu Ser Cys Val Ser Val Ser
1137 1395 1400 1405
1139 Asn Thr Ile Ser His Ala Pro Glu Lys Glu Trp Ile Val Arg Gly Gly
1140 1410 1415 1420
1142 Val Gly Ser Gly Lys Ser Thr Gly Leu Pro Phe Ala Leu Ser Ser Lys
E--> 1143 425 1430 1435 1440
1145 Gly Ala Val Leu Met Leu Glu Pro Thr Arg Pro Leu Ala Glu Asn Val
1146 1445 1450 1455
1148 Ser Arg Gln Leu Arg Gln His Pro Phe Tyr Ala Asn Pro Thr Leu Arg
1149 1460 1465 1470
1151 Met Arg Gly Met Ser Ser Phe Gly Ser Ser Asn Ile Cys Ile Met Thr
1152 1475 1480 1485
1154 Ser Gly Phe Ala Phe Asn Tyr Phe Ala Asn Asn Pro Leu Lys Leu Ser
1155 1490 1495 1500
1157 Asp Phe Glu Phe Val Ile Ile Asp Glu Cys His Val Leu Asp Ser Asn
E--> 1158 505 1510 1515 1520
1160 Ala Met Ala Phe Val Cys Leu Leu Lys Glu His Asn Tyr Asp Gly Lys
1161 1525 1530 1535
1163 Leu Leu Lys Val Ser Ala Thr Pro Gln Gly Arg Glu Cys Glu Phe His
1164 1540 1545 1550
1166 Thr Gln His Pro Val Ser Ile His Ile Glu Glu Gln Leu Ser Phe Gln
1167 1555 1560 1565
1169 Ala Phe Cys Glu Ala Gln Gly Thr Gly Ser Ala Arg Asp Val Ile Asn
1170 1570 1575 1580
1172 Lys Gly Asp Asn Ile Leu Val Tyr Val Ala Ser Tyr Asn Glu Val Asp
E--> 1173 585 1590 1595 1600
1175 Gln Leu Ser Lys Met Leu Gly Asp Lys Gly Tyr Leu Val Thr Lys Val
1176 1605 1610 1615
1178 Asp Gly Arg Thr Met Lys Ile Gly Ser Thr Asp Ile Val Thr Lys Gly
1179 1620 1625 1630
1181 Ser Ser Gln Lys Lys His Phe Ile Val Ala Thr Asn Ile Ile Glu Asn
1182 1635 1640 1645
1184 Gly Val Thr Leu Asp Val Asp Val Val Val Asp Phe Gly Leu Lys Val
1185 1650 1655 1660
1187 Thr Ala Glu Ile Asp Tyr Asp Asn Arg Cys Val Asn Tyr Thr Lys Thr
E--> 1188 665 1670 1675 1680
1190 Ser Ile Ser Tyr Gly Glu Arg Ile Gln Arg Leu Gly Arg Val Gly Arg
1191 1685 1690 1695
1193 His Lys Lys Gly His Ala Met Arg Ile Gly Thr Thr Ile Lys Gly Leu
1194 1700 1705 1710
1196 Ile Glu Ile Pro Ser Leu Val Ala Thr Gln Ala Ala Phe Gln Cys Phe
1197 1715 1720 1725
1199 Thr Tyr Gly Leu Pro Val Met Thr Gln Gly Val Ser Val Asn Ser Leu
1200 1730 1735 1740
1202 Ser Asn Cys Thr Val Arg Gln Ala Arg Val Met Ser Arg Phe Glu Leu
E--> 1203 745 1750 1755 1760
1205 Pro Pro Tyr Phe Met Ala Ser Leu Val Tyr His Asp Gly Ser Met His

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1206	1765	1770	1775
1208	Pro Glu Ile His Lys His Leu Ile Pro Tyr Lys Leu Asp Glu Ser Glu		
1209	1780	1785	1790
1211	Ile Gln Leu Ser Ala Met Ala Phe Asn Phe Thr Val Thr Ser Ile Trp		
1212	1795	1800	1805
1214	Leu Asp Cys Lys Phe Tyr Asp Ser Ile Gly Ile His Leu Asp Leu Pro		
1215	1810	1815	1820
1217	Arg Glu Ala Lys Ile Pro Phe His Cys Arg Glu Phe Pro Asp Met Lys		
E--> 1218	825	1830	1835
			1840
1220	Tyr Arg His Leu Trp Glu Asp Ile Leu Lys Ile Lys Ser Ile Asn Cys		
1221	1845	1850	1855
1223	Phe Gly Arg Met Ser Val Val Ser Ala Thr Lys Val Ala Tyr Thr Leu		
1224	1860	1865	1870
1226	Lys Thr Asp Ile His Ser Ile Gly Lys Thr Leu Gly Tyr Ile Asp Ala		
1227	1875	1880	1885
1229	Leu Leu Gln Glu Glu Tyr Arg Lys Gln His His Phe Lys Ala Met Thr		
1230	1890	1895	1900
1232	Ser Asn Ala Cys Ser Gly Asn Thr Phe Ser Met Leu Ser Ile Ala Asn		
E--> 1233	905	1910	1915
			1920
1235	Ala Ile Arg Asn His Tyr Ala Lys Asp Tyr Thr Ala Gly Asn Ile Gln		
1236	1925	1930	1935
1238	Lys Leu Gln Ala Ala Lys Asn Gln Ile Leu Glu Phe Val Asn Leu Asn		
1239	1940	1945	1950
1241	Leu Asp Pro Ser Ala Lys Cys Gly Phe Gln Glu Phe Gly Ala Leu Glu		
1242	1955	1960	1965
1244	Leu Val Thr His Gln Ser Arg Gln Glu Ile Ser Lys Phe Leu Asn Leu		
1245	1970	1975	1980
1247	Arg Gly Lys Trp Asn Lys Ser Leu Ile Thr Arg Asp Ile Leu Val Leu		
E--> 1248	985	1990	1995
			2000
1250	Leu Gly Val Thr Ile Gly Phe Trp Met Ile Trp Asp Lys Phe Lys		
1251	2005	2010	2015
1253	Ser Asn Ile Glu Glu Val His His Glu Gly Lys Arg Lys Thr Gln Lys		
1254	2020	2025	2030
1256	Leu Lys Phe Arg Asp Ala Arg Asp Lys Lys Met Gly Arg Glu Val Tyr		
1257	2035	2040	2045
1259	Gly Asp Asp Gly Thr Ile Glu His Tyr Phe Gly Ser Ala Tyr Val Lys		
1260	2050	2055	2060
1262	Arg Gly Ala Val Lys Gly Gln Lys Arg Gly Met Gly Glu Lys Ser Arg		
E--> 1263	065	2070	2075
			2080
1265	Arg Phe Val Ser Met Tyr Gly Val Asn Leu Glu Asp Phe Ala Phe Ile		
1266	2085	2090	2095
1268	Arg Tyr Ile Asp Pro Ile Thr Gly Ala Thr Arg Asp Glu Ser Pro Leu		
1269	2100	2105	2110
1271	Thr Asp Val Glu Leu Val Gln Ala His Phe Gly Glu Ile Arg Asp Lys		
1272	2115	2120	2125
1274	Met Leu Asp Glu Gly Leu Ile Asp Arg Gln His Ile Leu Asn Lys Pro		
1275	2130	2135	2140
1277	Gly Leu Thr Ala Tyr Leu Val Lys Asp Gly Val Lys Ser Ile Met Lys		
E--> 1278	145	2150	2155
			2160

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1280 Val Asp Leu Gln Pro His Asn Pro Leu Leu Ile Cys Lys Asn Lys Ala
1281 2165 2170 2175
1283 Thr Ile Ala Gly Phe Pro Glu Lys Glu Phe Val Leu Arg Gln Thr Asp
1284 2180 2185 2190
1286 Lys Ala Tyr Glu Val Ser Arg Glu Glu Leu Pro Glu Arg Asn Glu Asp
1287 2195 2200 2205
1289 Val Ser Phe Glu Gly Ala Ser Ser Val Lys Gly Leu Arg Asp Tyr Asn
1290 2210 2215 2220
1292 Gly Val Ala Ser Ala Ile Cys Gln Leu Thr Asn Asn Ser Asn Gly Arg
E--> 1293 225 2230 2235 2240
1295 Ser Thr Thr Tyr Gly Val Gly Phe Gly Ser Tyr Ile Ile Val Asn
1296 2245 2250 2255
1298 Arg His Leu Phe Lys Glu Asn Asn Gly Asn Leu Leu Ile Lys Ser Thr
1299 2260 2265 2270
1301 His Gly Asn Phe Asn Ile Arg Asn Ser Lys Gln Ile Lys Val Val Gly
1302 2275 2280 2285
1304 Val Glu Asp Arg Asp Ile Ala Ile Leu Gln Met Pro Lys Asp Phe Pro
1305 2290 2295 2300
1307 Pro Phe Ala Gln Arg Leu Arg Phe Arg Asn Pro Ile Val Gly Glu Ser
E--> 1308 305 2310 2315 2320
1310 Ile Cys Leu Val Gly Asn Thr Phe Gln Glu Lys Tyr Asn Ala Ser Ile
1311 2325 2330 2335
1313 Val Ser Glu Thr Ser Lys Thr Phe Pro Arg Val Glu Gly Ser Phe Trp
1314 2340 2345 2350
1316 Lys His Trp Ile Asn Thr Thr Glu Gly His Cys Gly Leu Pro Leu Val
1317 2355 2360 2365
1319 Ser Val Thr Asp Gly Phe Ile Val Gly Ile His Ser Leu Met Ser His
1320 2370 2375 2380
1322 Lys Tyr Asp His Asn Tyr Phe Ser Asn Phe Asp Asp Ala Phe Glu Gly
E--> 1323 385 2390 2395 2400
1325 Asp Tyr Ile Asn Lys Leu Lys Glu Leu Lys Trp Glu Gln Asn Trp Thr
1326 2405 2410 2415
1328 Tyr Asn Val Asn Thr Val Ser Trp Gly Asn Met Lys Leu Gln Asp Ser
1329 2420 2425 2430
1331 Ala Pro Cys Lys Glu Phe Lys Thr Thr Lys Leu Ile Ser Asp Leu Cys
1332 2435 2440 2445
1334 Thr Glu Pro Val Cys Ala Gln Ser Ser Asn Gln Val Arg Trp Leu Tyr
1335 2450 2455 2460
1337 Asn Gln Leu Glu Gly Asn Leu Lys Ala Val Ala Thr Ile Pro Asn Asn
E--> 1338 465 2470 2475 2480
1340 Phe Val Thr Lys His Ile Val Lys Gly Arg Cys Lys Leu Phe Glu Leu
1341 2485 2490 2495
1343 Tyr Leu Gln Thr Arg Ser Glu Ala Asn Glu Phe Phe Lys Pro Leu Met
1344 2500 2505 2510
1346 Gly Phe Tyr Gly Lys Ser Gly Leu Asn Lys Glu Ala Tyr Ile Lys Asp
1347 2515 2520 2525
1349 Leu Phe Lys Tyr Ser Ser Glu Ile Pro Ile Gly Glu Val Asp Thr Glu
1350 2530 2535 2540
1352 Arg Phe Glu Asp Ala Val Gly Gln Val Ile Glu Ile Met Met Gln Trp

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E--> 1353 545 2550 2555 2560
1355 Asn Phe Arg Glu Cys Lys Tyr Ile Thr Asp Cys Asp Gln Ile Phe Glu
1356 2565 2570 2575
1358 Ser Leu Asn Met Lys Ala Ala Val Gly Ala Leu Tyr Ser Gly Lys Lys
1359 2580 2585 2590
1361 Lys Ala Tyr Phe Glu Asn Ser Thr Phe Asp Asp Arg Asn His Leu Leu
1362 2595 2600 2605
1364 Gln Leu Ser Cys Leu Arg Leu Phe Lys Gly Asp Leu Gly Ile Trp Asn
1365 2610 2615 2620
1367 Gly Ser Leu Lys Ala Glu Leu Arg Pro Ile Glu Lys Val Glu Ala Asn
E--> 1368 625 2630 2635 2640
1370 Lys Thr Arg Thr Phe Thr Ala Ala Pro Ile Glu Thr Leu Leu Gly Gly
1371 2645 2650 2655
1373 Lys Val Cys Val Asp Asp Phe Asn Asn Gln Phe Tyr Asp Leu Asn Met
1374 2660 2665 2670
1376 Lys Cys Pro Trp Thr Val Gly Met Thr Lys Phe Tyr Cys Gly Trp Asn
1377 2675 2680 2685
1379 Asp Leu Leu Gly Lys Leu Pro Asp Gly Trp Ile Tyr Arg Asp Ala Asp
1380 2690 2695 2700
1382 Gly Ser Arg Phe Asp Ser Ser Leu Thr Pro Tyr Leu Leu Asn Ala Val
E--> 1383 705 2710 2715 2720
1385 Leu Gly Ile Arg Glu Phe Phe Met Glu Asp Trp Asp Ile Gly Val Gln
1386 2725 2730 2735
1388 Met Leu Arg Asn Leu His Thr Glu Ile Ile Tyr Thr Pro Ile Ala Thr
1389 2740 2745 2750
1391 Pro Asp Gly Thr Val Val Lys Lys Phe Arg Gly Asn Asn Ser Gly Gln
1392 2755 2760 2765
1394 Pro Ser Thr Val Val Asp Asn Thr Leu Met Val Cys Ile Cys Val Gln
1395 2770 2775 2780
1397 Tyr Ser Leu Ile Met Asn Ser Val Lys Phe Glu Asn Gln Asp Asp Val
E--> 1398 785 2790 2795 2800
1400 Cys Arg Tyr Phe Val Asn Gly Asp Asp Leu Leu Leu Ala Ile Asn Pro
1401 2805 2810 2815
1403 Lys Phe Ile His Ile Leu Asp Ser Phe Lys Val His Phe Ala Asn Leu
1404 2820 2825 2830
1406 Gly Leu Asp Tyr Asp Phe Ser His Arg Thr Lys Asp Lys Gly Glu Leu
1407 2835 2840 2845
1409 Trp Phe Met Ser His Lys Gly Val Lys Leu Asn Asp Met Tyr Ile Pro
1410 2850 2855 2860
1412 Lys Leu Glu Pro Glu Arg Val Val Ser Ile Leu Glu Trp Asp Arg Ser
E--> 1413 865 2870 2875 2880
1415 Val Lys Pro Glu His Arg Leu Glu Ala Ile Cys Ala Ser Met Ile Glu
1416 2885 2890 2895
1418 Ala Trp Gly Tyr Pro Arg Leu Ile His Glu Ile Arg Lys Phe Tyr Ala
1419 2900 2905 2910
1421 Trp Val Leu Glu Gln Ala Pro Tyr Asn His Leu Ala Ser Glu Gly Lys
1422 2915 2920 2925
1424 Ala Pro Tyr Ile Ser Glu Thr Ala Leu Lys Arg Leu Tyr Thr Cys Glu
1425 2930 2935 2940

See page 4

RAW SEQUENCE LISTING
PATENT APPLICATION: US/10/076,839

DATE: 03/04/2002
TIME: 14:56:13

Input Set : A:\PH-1176 (Sequence Listing).txt
Output Set: N:\CRF3\03042002\J076839.raw

1427 Glu Gly Ser Ala Asp Glu Ile Met Ser Tyr Leu Glu Met Cys Ala Ser
 E--> 1428 945 2950 2955 2960
 1430 Asp Leu Asn Glu Asp Glu Tyr Phe Asp Asp Glu Asp Val Ser His Gln
 1431 2965 2970 2975
 1433 Ser Ala Leu Asp Ala Gly Lys Pro Thr Ala Glu Asn Lys Lys Asp Asp
 1434 2980 2985 2990
 1436 Glu Glu Arg Lys Asn Lys Glu Glu Lys Gln Glu Asn Lys Asn Lys Asn
 1437 2995 3000 3005
 1439 Lys Glu Val Glu Lys Lys His Glu Lys Thr Ser Asn Ser Ala Ser Gly
 1440 3010 3015 3020
 1442 Ala Ile Val Ser Asn Asn Glu Lys Asp Lys Asp Val Asp Val Gly Ser
 E--> 1443 025 3030 3035 3040
 1445 Ser Gly Ser Phe Ile Ile Pro Arg Ile Lys Ser Ile Ser Asn Lys Leu
 1446 3045 3050 3055
 1448 Thr Met Pro Lys Val Lys Gly Lys Gly Ile Leu Asn Leu Glu Phe Leu
 1449 3060 3065 3070
 1451 Leu Gln Tyr Thr Pro Asp Gln Val Asp Ile Ser Asn Thr Arg Ala Ser
 1452 3075 3080 3085
 1454 Ile Ser Gln Phe Asn Thr Trp Tyr Asn Ala Val Lys Glu Ser Tyr Gly
 1455 3090 3095 3100
 1457 Val Ser Asp Glu Glu Met Gly Ile Ile Leu Asn Gly Leu Met Val Trp
 E--> 1458 105 3110 3115 3120
 1460 Cys Ile Glu Asn Gly Thr Ser Pro Asn Ile Asn Gly Met Trp Phe Met
 1461 3125 3130 3135
 1463 Met Gln Gly Glu Gln Ile Glu Tyr Pro Leu Gln Pro Ile Val Glu
 1464 3140 3145 3150
 1466 Asn Ala Lys Pro Thr Leu Arg Gln Ile Met Ala His Phe Ser Asn Val
 1467 3155 3160 3165
 1469 Ala Glu Ala Tyr Ile Glu Lys Arg Asn Tyr Glu Lys Pro Tyr Met Pro
 1470 3170 3175 3180
 1472 Arg Tyr Gly Ile Gln Arg Asn Leu Thr Asp Met Ser Leu Ala Arg Tyr
 E--> 1473 185 3190 3195 3200
 1475 Ala Phe Asp Phe Tyr Glu Met Thr Ser Arg Thr Pro Ala Arg Ala Arg
 1476 3205 3210 3215
 1478 Glu Ala His Ile Gln Met Lys Ala Ala Leu Arg Asp Ala Asn Asn
 1479 3220 3225 3230
 1481 Lys Met Phe Gly Leu Asp Gly Lys Val Gly Asn Ala Thr Glu Asn Thr
 1482 3235 3240 3245
 1484 Glu Arg His Thr Ala Asp Asp Val Asn His Asn Thr His Ala Phe Thr
 1485 3250 3255 3260
 1487 Gly Val Arg Tyr Tyr
 1488 3265
 1563 <210> SEQ ID NO: 4
 1564 <211> LENGTH: 243
 1565 <212> TYPE: PRT
 1566 <213> ORGANISM: Papaya Leaf-Distortion Mosaic Virus
 E--> 1568 <400> SEQUENCE: 2
 1569 Gly Ala Ser Ser Val Lys Gly Leu Arg Asp Tyr Asn Gly Val Ala Ser
 1570 1 5 10 15

See page 4

These numbers must match

RAW SEQUENCE LISTING
PATENT APPLICATION: US/10/076,839

DATE: 03/04/2002
TIME: 14:56:13

Input Set : A:\PH-1176 (Sequence Listing).txt
Output Set: N:\CRF3\03042002\J076839.raw

1572 Ala Ile Cys Gln Leu Thr Asn Asn Ser Asn Gly Arg Ser Thr Thr Thr
1573 20 25 30
1575 Tyr Gly Val Gly Phe Gly Ser Tyr Ile Ile Val Asn Arg His Leu Phe
1576 35 40 45
1578 Lys Glu Asn Asn Gly Asn Leu Leu Ile Lys Ser Thr His Gly Asn Phe
1579 50 55 60
1581 Asn Ile Arg Asn Ser Lys Gln Ile Lys Val Val Gly Val Glu Asp Arg
1582 65 70 75 80
1584 Asp Ile Ala Ile Leu Gln Met Pro Lys Asp Phe Pro Pro Phe Ala Gln
1585 85 90 95
1587 Arg Leu Arg Phe Arg Asn Pro Ile Val Gly Glu Ser Ile Cys Leu Val
1588 100 105 110
1590 Gly Asn Thr Phe Gln Glu Lys Tyr Asn Ala Ser Ile Val Ser Glu Thr
1591 115 120 125
1593 Ser Lys Thr Phe Pro Arg Val Glu Gly Ser Phe Trp Lys His Trp Ile
1594 130 135 140
1596 Asn Thr Thr Glu Gly His Cys Gly Leu Pro Leu Val Ser Val Thr Asp
1597 145 150 155 160
1599 Gly Phe Ile Val Gly Ile His Ser Leu Met Ser His Lys Tyr Asp His
1600 165 170 175
1602 Asn Tyr Phe Ser Asn Phe Asp Asp Ala Phe Glu Gly Asp Tyr Ile Asn
1603 180 185 190
1605 Lys Leu Lys Glu Leu Lys Trp Glu Gln Asn Trp Thr Tyr Asn Val Asn
1606 195 200 205
1608 Thr Val Ser Trp Gly Asn Met Lys Leu Gln Asp Ser Ala Pro Cys Lys
1609 210 215 220
1611 Glu Phe Lys Thr Thr Lys Leu Ile Ser Asp Leu Cys Thr Glu Pro Val
1612 225 230 235 240
1614 Cys Ala Gln
1617 1/1

remove extra material at
end of file

A Use of n and / or Xaa has been detected in the
Sequence Listing. Review the Sequence Listing
to ensure a corresponding explanation is present
in the <220> to <223> fields of each sequence
using n or Xaa.

VERIFICATION SUMMARY
PATENT APPLICATION: US/10/076,839

DATE: 03/04/2002
TIME: 14:56:14

Input Set : A:\PH-1176 (Sequence Listing).txt
Output Set: N:\CRF3\03042002\J076839.raw

L:9 M:270 C: Current Application Number differs, Replaced Current Application No
L:9 M:271 C: Current Filing Date differs, Replaced Current Filing Date
L:36 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L:866 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L:1068 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
M:332 Repeated in SeqNo=2
L:1494 M:283 W: Missing Blank Line separator, <220> field identifier
L:1568 M:212 E: (34) Invalid or duplicate Sequence ID Number, SEQUENCE ID NOS:4 differs:2